CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). ~~A method of determining, in a fluid sample, the presence of particle(s) having substantially a predetermined size or range of size(s), the method comprising the steps of~~ A method of determining, in a fluid sample, a presence of particles having a substantially predetermined size or a substantially predetermined range of sizes, the method which comprises:

providing the sample in a chamber;

illuminating the sample in the chamber with a first wavelength of light,

obtaining a first response signal indicative of the first illumination,

illuminating the sample in the chamber with a second wavelength of light,

obtaining a second response signal indicative of the second illumination, and

determining the presence of the particles having the size or range of ~~size(s)~~ sizes, while canceling out influences on the first signal and on the second signal due to changes in the chamber that occur over time, by ~~comparing the first and second signals~~ subtracting the first signal from the second signal.

Claims 2-3 (canceled).

Claim 4 (currently amended). ~~A method as claimed in claim 2 or 3~~ The method according to claim 1, wherein the second wavelength provides a response signal for ~~particle sizes both substantially of the size or in the predetermined range and particle sizes substantially not of the size or outside the predetermined range~~ particles having the substantially predetermined size or the substantially predetermined range of sizes and for particles not having the substantially predetermined size or the substantially predetermined range of sizes, and the first wavelength provides a response signal for ~~particle sizes substantially not of the size or outside the predetermined range~~ particles not having the substantially predetermined size or outside of the substantially predetermined range of sizes.

Claim 5 (currently amended). ~~A method as claimed in claim 1, further comprising the step of~~ The method according to claim 1, which further comprises: upon detecting particles of the predetermined ~~size(s)~~ size or the range of sizes, triggering an alarm signal.

Claim 6 (currently amended). ~~A method as claimed in claim 5~~ The method according to claim 5, wherein the alarm signal is indicative of an alarm condition for a pyrolysis, smouldering and/or smoke event.

Claim 7 (currently amended). ~~A method as claimed in claim 1, wherein the first wavelength is infrared light and the second wavelength is blue light~~ The method according to claim 1, which further comprises: providing the first wavelength as infrared light and the second wavelength as blue light.

Claim 8 (currently amended). ~~A method as claimed in claim 1, wherein~~ The method according to claim 1, which further comprises: providing the first wavelength of light ~~is~~ in the range of 650nm to 1050nm, and second wavelength of light ~~is~~ in the range of 400nm to 500nm.

Claim 9 (currently amended). ~~A method as claimed in claim 1, further comprising the steps of~~ The method according to claim 1, which further comprises:

illuminating the sample with at least one further wavelength of light, in which particles of at least one further ~~size(s) or range of size(s)~~ size or range of sizes are relatively responsive to the further wavelength of light,

obtaining at least one further response ~~signal(s)~~ signal indicative of the further illumination, and

determining the presence of the particles of the further ~~size(s)~~ size or range of sizes by comparing the ~~first, second and/or further signal(s)~~ first signal, the second signal, and the further signal.

Claim 10 (currently amended). ~~A method as claimed in claim 1, wherein at least one of the illuminations is polarised~~. The method according to claim 1, which further comprises: polarizing at least one of the first illumination and the second illumination.

Claim 11 (currently amended). ~~A method as claimed in claim 1, wherein at least one of the illuminations is horizontally and/or vertically polarised~~ The method according to claim 1, which further comprises: horizontally and/or vertically polarizing at least one of the first illumination and the second illumination.

Claim 12 (currently amended) ~~A method as claimed in claim 1, wherein~~ The method according to claim 1, which further comprises: providing the first illumination ~~is~~ as a relatively longer wavelength that is horizontally polarised and the second illumination ~~is~~ as a relatively short wavelength that is vertically polarised.

Claim 13 (currently amended). ~~A method as claimed in claim 1, wherein~~ The method according to claim 1, which further comprises: providing the first illumination ~~is~~ as a red or infrared light that is horizontally polarised and

providing the second illumination ~~is~~ as a blue wavelength light that is vertically polarised.

Claim 14 (currently amended). ~~A method as claimed in claim 1, wherein~~ The method according to claim 1, which further comprises: providing the first illumination ~~is~~ as a red or infrared light that is horizontally polarised and providing the second illumination ~~is~~ as a blue light that is un-polarised.

Claim 15 (currently amended). A particle monitor adapted to determine, in a fluid sample in a chamber, the presence of particle(s) having a predetermined range of size(s), the monitor comprising:

first illumination means for illuminating the sample in the chamber with a first wavelength of light, the first light being of a wavelength to which particles of a first size(s) are relatively responsive,

a first signal means for providing a first signal indicative of the first illumination, second illumination means for illuminating the sample in the chamber with a second wavelength of light, the second light being of a wavelength to which particles of a second size(s) are relatively responsive,

a second signal means for providing a second signal indicative of the second illumination, and

logic means for ~~comparing the first and second signals to determine the presence of the particles in the predetermined range~~ determining the presence of the particles in the predetermined range, while canceling out influences on the first signal and on the second signal due to changes in the chamber that occur over time, by subtracting the first signal from the second signal.

Claim 16 (currently amended). Apparatus adapted to detect, in a fluid sample in a chamber, particle(s) having a predetermined range of size(s), said apparatus comprising:

processor means adapted to operate in accordance with a predetermined instruction set, said apparatus, in conjunction with said instruction set, being adapted to perform the method comprising the steps of:

illuminating the sample in the chamber with a first wavelength of light,

obtaining a first response signal indicative of the first illumination,

illuminating the sample in the chamber with a second wavelength of light,

obtaining a second response signal indicative of the second illumination, and

determining the presence of the particles having the size or range of size(s), while canceling out influences on the first signal and on the second signal due

to changes in the chamber that occur over time, by ~~comparing the first and second signals~~ subtracting the first signal from the second signal.

Claim 17 (original). A gain control apparatus adapted for providing gain control in a particle monitor, said apparatus comprising:

a first gain stage having a first amplifier,

a second gain stage having a second amplifier, and a voltage or current-controlled feedback from the output of the second stage to the input of the first stage so that the frequency response of the amplifier is unaffected by said feedback.

Claim 18 (original). An apparatus as claimed in claim 17, wherein the feedback comprises at least a light dependent resistor.

Claim 19 (original). An apparatus as claimed in claim 17 or 18, wherein a gain control function is non-linear.

Claim 20 (previously presented). An apparatus as claimed in claim 16, wherein the feedback comprises at least a light dependent resistor.

Claim 21 (previously presented). A monitor as claimed in claim 15 comprising the gain control of anyone of claims 17 to 18.

Claim 22 (original). A method of determining a service interval for a particle monitor, the method comprising the steps of:

determining the presence of dust particle(s) distinctly from smoke particles, providing a measure of the presence of the dust particle(s), and providing a service indicating when the measure has reached a predetermined threshold.

Claim 23 (previously presented). A method as claimed in claim 22, wherein the measure is of particle(s) number, frequency, concentration and/or duration of detection.

Claim 24 (original). A particle monitoring chamber, comprising:

a first iris operable in association with a source of illumination,

a lens adapted to focus impinging light toward a receiver cell, and

a primary iris configured to substantially prevent light emanating directly from the first iris to impinge on the lens.

Claim 25 (original). A particle monitoring chamber, comprising:

a first lens operable in association with a source of illumination,

a lens adapted to focus impinging light toward a receiver cell, and

a primary iris configured to substantially prevent light emanating directly from the first lens to impinge on the second lens.

Claim 26 (original). A particle monitoring chamber, comprising:

a source of illumination,

a lens adapted to focus impinging light toward a receiver cell, and

a primary iris configured to substantially prevent light emanating directly from the source of illumination from impinging on the lens.

Claim 27 (original). A chamber as claimed in claim 24, 25 or 26, wherein the primary iris forms a physical barrier to the directly emanating light.

Claim 28 (previously presented). A chamber as claimed in claims 24, 25 or 26, wherein the lens is further configured to substantially prevent light reflecting from the primary iris onto the receiving cell.

Claim 29 (previously presented). A chamber as claimed in claims 24, 25 or 26, wherein the lens is a biconvex lens.

Claim 30 (previously presented). A chamber as claimed in claims 24, 25 or 26, wherein the lens is an aspheric lens.

Claim 31 (previously presented). A chamber as claimed in claims 24, 25 or 26, wherein the impinging light is second and/or third order light emanating from reflections off the primary iris and wherein the impinging second and/or third order light is focused onto a relatively inactive part of the receiver.

Claim 32 (previously presented). A particle monitor including a chamber as claimed in claims 24, 25 or 26.

Claim 33 (previously presented). In combination, a biconvex lens and a monitor as claimed in claim 15.

Claim 34 (original). A method of determining the velocity of fluid flowing through a given area, the method comprising the steps of:

providing a first sensor in the path of the fluid flow at a point of relatively low fluid velocity,

providing a second sensor in the path of the fluid flow at a point of relatively higher fluid velocity, the second sensor having substantially similar temperature characteristics to the first sensor,

determining the fluid velocity based on a measure of the cooling effect of the fluid passing the first and second sensors.

Claim 35 (original). A method as claimed in claim 34, wherein the first sensor is shielded from the fluid flow.

Claim 36 (original). A method as claimed in claim 34 or 35, wherein the measure of cooling effect is based on the rate of cooling.

Claim 37 (previously presented). A method as claimed in claim 34 or 35, wherein the area is in a particle monitor.

Claim 38 (original). Apparatus adapted to determine the velocity of fluid flowing through a given area, comprising:

a first sensor adapted to be provided in the path of the fluid flow at a point of relatively low fluid velocity,

a second sensor adapted to be provided in the path of the fluid flow at a point of relatively higher fluid velocity, the second sensor having substantially similar temperature characteristics as the first sensor,

comparator means adapted to determine the fluid velocity based on a measure of the cooling effect of the fluid passing the first and second sensors.

Claim 39 (original). A method of mounting a housing on a duct, the method comprising the steps of:

providing at least one tab element in association with the housing,

locating the housing proximate the mounting area of the duct,

shaping the tab element to substantially fit a profile of the duct proximate the mounting area, and

attaching the housing using the tab element.

Claim 40 (original). A method as claimed in claim 39, wherein the tab element is integral with the housing.

Claim 41 (original). A housing arrangement adapted to be mounted on a duct, comprising:

at least one tab element associated with the housing, and

the tab element being adapted to be shaped to substantially fit a profile of the duct proximate a mounting area.

Claim 42 (original). An arrangement as claimed in claim 41, wherein the tab is integral with the housing.

Claim 43 (original). An arrangement as claimed in claim 41 or 42, being a particle monitor housing.

Claim 44 (currently amended). Apparatus adapted to detect particle(s) in a fluid sample in a chamber, said apparatus including:

processor means adapted to operate in accordance with a predetermined instruction set,

said apparatus, in conjunction with said instruction set, being adapted to perform the method comprising the steps of:

illuminating the sample in the chamber with a first wavelength of light,

obtaining a first response signal indicative of the first illumination,

illuminating the sample in the chamber with a second wavelength of light,

obtaining a second response signal indicative of the second illumination, and

determining the presence of the particles having the size or range of size(s), while canceling out influences on the first signal and on the second signal due to changes in the chamber that occur over time, by ~~comparing the first and second signals~~ subtracting the first signal from the second signal.

Claim 45 (canceled).

Claim 46 (original). A particle monitor adapted to determine, in a fluid sample, the presence of particle(s) having a predetermined size or ranges of sizes, the monitor comprising: output means adapted to provide, as an indication of the particle(s), a logarithmic scaled signal.

Claim 47 (original). A monitor as claimed in claim 46, wherein the monitor is a monitor as herein disclosed.

Claim 48 (original). A monitor as claimed in claim 46, wherein the scaled signal is provided to an alarm.

Claim 49 (original). A smoke detector comprising the monitor of claim 46, 47 or 48.

Claim 50 (previously presented). A monitor as claimed in claim 15 or 46, wherein the monitor is a point detector.

Claim 51 (previously presented). A monitor as claimed in claim 21, wherein the monitor is a point detector.

Claim 52 (previously presented). A monitor as claimed in claim 32, wherein the monitor is a point detector.

Claim 53 (currently amended). ~~An apparatus as claimed in anyone of claims 16, 38 or 44~~ The apparatus according to claim 16, wherein the apparatus is a point detector.

Claim 54 (previously presented). A smoke detector as claimed in claim 49, wherein the detector is a point detector.

Claim 55 (previously presented). A monitor as claimed in claim 15 or 46, wherein the monitor is an aspirated detector.

Claim 56 (previously presented). A monitor as claimed in claim 21, wherein the monitor is an aspirated detector.

Claim 57 (previously presented). A monitor as claimed in claim 32, wherein the monitor is an aspirated detector.

Claim 58 (previously presented). An apparatus as claimed in anyone of claims 16, 38 or 44, wherein the apparatus is an aspirated detector.

Claim 59 (previously presented). A smoke detector as claimed in claim 49, wherein the detector is an aspirated detector.

Claim 60 (previously presented). A monitor as claimed in claim 15 or 46, wherein the monitor is a particle monitor.

Claim 61 (previously presented). A monitor as claimed in claim 21, wherein the monitor is a particle monitor.

Claim 62 (previously presented). A monitor as claimed in claim 32, wherein the monitor is a particle monitor.

Claim 63 (previously presented). An apparatus as claimed in anyone of claims 16, 38 or 44, wherein the apparatus is a particle monitor.

Claim 64 (previously presented). A smoke detector as claimed in claim 49, wherein the detector is a particle monitor.

Claim 65 (previously presented). Apparatus adapted to determine a service interval for a particle monitor, said apparatus including:

processor means adapted to operate in accordance with a predetermined instruction set, said apparatus, in conjunction with said instruction set, being adapted to perform a method of determining a service interval for a particle monitor, the method comprising the steps of:

determining the presence of dust particle(s) distinctly from smoke particles,

providing a measure of the presence of the dust particle(s), and

providing a service indicating when the measure has reached a predetermined threshold.

Claim 66. (previously presented) An apparatus as claimed in claim 65, wherein the measure is of particle(s) number, frequency, concentration and/or duration of detection.